Tokenism or realism? Gender inclusion in corporate boards

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Abstract

Purpose – The paper investigates how the interplay of women-specific human and social capital factors with ownership structure impacts her chances to get director level appointment in the light of recent amendments to the Indian statute.

Design/methodology/approach – The strength of the study lies in fitting a logistic regression model to the unique hand collected data on women director characteristics from 100 large listed Indian firms.

Findings – Counter intuitive findings reveal negative effects of social capital on appointment of independent women directors. This relationship gets reversed when social capital is moderated by ownership structure.

Social implications – Companies may be influenced to take into cognizance the underlying gender biases prevailing in the highest echelons of management and employ un-gendered fair selection practices for board level appointments in order to progress towards gender balanced corporate boards.

Originality/value – The paper is a first of its kind that combines aspects of human capital and ownership structure using Indian data. By developing several new proxy variables to enrich the construct of social capital it contributes to the corporate governance literature and lastly, through main and interaction effects, the paper offers a deeper understanding about the impact of endogenous factors of corporate boards on women’s representation at leadership levels in India.

Keywords Social capital, Human capital, India, Corporate governance, Gender diversity

Paper type Research paper

Introduction

Board of director’s characteristics are of critical importance with respect to corporate governance right from their central role in establishing the business strategy, setting the policy objectives, while also being involved in planning and managing resources (Carter et al., 2010; Nekhili and Gatfaoui, 2013). There is nearly universal agreement in academic research, policy, and practice that two distinct types of board of director’s characteristics, namely, the directors’ status as independent (e.g. external, non-executive) and gender are of critical importance in the context of corporate governance (Terjesen et al., 2014). Further, ownership structure has been found to play a significant role in the decision to appoint women to boards and the importance attached to diversity varies across firms according to their ownership structure (Ben Amar et al., 2013; Nekhili and Gatfaoui, 2013). Despite significant interest from practitioners, policymakers, and academics, there is paltry research that explores board of

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directors’ characteristics in a gender diversity framework. This gap in literature is all the more evident in studies from emerging economies where firms with concentrated shareholding form a significant part of the corporate sector. Our study thus aims to make contributions to the existing research by exploring the complex relationship between ownership structure and the determinants of board diversity with evidences from India.

The growing importance of gender diversity and inclusion on corporate boards stems from mainly two types of concerns, namely, ethical and economic (Isidro and Sobral, 2014). Enhancing female representation in corporate boards is thus a critical issue for policymakers in light of its relation with corporate governance (Adams and Ferreira, 2009; Bilimoria and Piderit, 1994; Peterson and Philpot, 2007). Following suit of many other countries (Terjesen et al., 2014), India, incorporated a mandatory provision in the revised Companies Act, 2013 for appointing at least one-woman director on the boards of listed and certain other firms in a phased manner. The companies were required to comply with the law by 31st March, 2015. There was a rush for appointments in 2014–15 as a response to the mandate, with majority appointments in March 2015 alone. As of March 31, 2016, government data revealed that a large portion of companies have failed to comply with this rule – out of 5,451 companies listed on the Bombay Stock Exchange (BSE is one of India’s leading exchange groups which is the first (established in 1875) and fastest stock exchange (speed of six microseconds) in the world), 1,375 companies have not complied (Ila Ananya, 2016). The reasons for this limited success in implementing the law are said to be fairly complex and deep rooted in the socio-economic fabric of the society (Sarkar and Selarka, 2015).

Extant literature on board characteristics has relied on several theoretical frameworks at individual, board, and firm level of analysis (Terjesen et al., 2009). We have drawn upon resource dependency framework and argued that in today’s increasingly complex and uncertain environment there is a need for leadership from individuals who can provide breadth of resources (Hillman et al., 2000). Such resources may include prestige, legitimacy and expert knowledge among many others that constitute the human and social capital of the individual board members (Brammer et al., 2007). Given the crucial role played by the board members in influencing decisions related to corporate governance of the firm, the role of ownership structure (Beasley, 1996) in representation of women on boards is an emerging field of inquiry (Saeed et al., 2017). Evidence suggest that shareholder concentration is negatively associated with gender and independence (Kang et al., 2007; Nekhili and Atafu, 2013; Smith and Parrott, 2018). Representation of women on boards has also been found to be closely related to family ownership (Campbell and Minguez-Vera, 2008; Ruigrok et al., 2007; Buse et al., 2014). In India a large number of publicly held corporations have concentrated ownership and control structures and the widely held firms with diffused ownership are more an exception rather than a rule (Sarkar and Selarka, 2015).

Thus, in this study, we examine the factors affecting the representation of women on corporate boards (WOCBs) of directors by asking two main questions: Does human and social capital of the women directors of corporate boards play a role in their status on the board in terms of independence? Does firm ownership structure have an effect on the relationship between human and social capital of the female directors and their status on the board?

As noted by Hillman et al. (2007), extant scholarly knowledge is mostly limited to studies, which consider female representation on boards of directors to be exogenous. Findings are likely to throw light upon the potential endogenous barriers to implementation of the legislation in its true spirit as well as on the extent of tokenism prevalent in India.

Theoretical overview and hypotheses

India: an emerging context for D and I

Globally, diversity and inclusion (D and I) have become conspicuous organizational and societal concerns, more so due to growing market, firm, and workforce globalization as well
as the changing legal, social, and economic paradigms (Shen et al., 2009). However, there is a
dearth of research into $D$ and $I$ trend in emerging economies (Healy and Oikelome, 2007; Donnelly, 2015) and India is a key example amongst these countries (Stumpf et al., 2010).

India is a heterogeneous, multi-cultural society marked by diversity in ethnicity, religion, language, and social status (Budhwar et al., 2005; Som, 2007). Yet the legal and organizational infrastructure for diversity in India is inconsistent and limited (Donnelly, 2015; Haq, 2012). Equal opportunities and antidiscrimination legislation are elements of the Indian Constitution and laws to protect the civil rights of vulnerable groups. However, they are not comprehensive and enforceability is poor (Woodard and Saini, 2006). It is no surprise therefore that gender parity continues to be an area of concern. Indeed, India has been ranked 108th out of 149 countries in World Economic Forum gender gap index, with a rank of 142nd in the economic opportunity and participation sub index.

Post liberalization of the Indian economy, there is growing competition for talent (Budhwar and Boyne, 2004). More women having relevant educational qualifications are entering the organized labour market, especially from the middle class. Urban women are pursuing new career opportunities providing them more personal, social, and economic independence (Nath, 2000; Chadha, 2002; Jhabvala and Sinha, 2002; Das, 2018). However, the increasing representation of women in higher education and professional careers in India has not resulted in their commensurate advancement into the upper echelons of organizations wherein they continue to face barriers (Bhatnagar and Nair, 1988; Gupta et al., 1998; Patil, 2001; Khandelwal, 2002; Kulkarni, 2002; Mehra, 2002; Budhwar and Varma, 2010). Albeit its known that women around the world face several restraints on their freedom and equality, the traditional religious and socio-cultural burdens on women in India are rather challenging (Haq, 2012).

Gender inclusion at leadership levels in India
In the absence of any legal mandate, corporates in India have been unenthusiastic to giving adequate representation to women on their board of directors even though there has not been much scarcity of professional women to fill up the positions in leadership levels of firms (Kishore, 2016). According to available estimates, although the labour force in India comprise 36 per cent of women, employment in work organisations constitute 26 per cent women, and 4.7 per cent account for board positions (Sarkar and Selarka, 2015). This phenomenon of attrition of women as one moves up the corporate ranks known as the “leaky pipeline” is commonly prevalent in India, relegating it amongst the lowest levels of the Asian cohorts (McKinsey, 2012; Community Business, 2011). The proportion of women leaving their job between junior to middle level is highest for India at 48 per cent, as compared to other major Asian countries (Community Business, 2011).

The leaky pipeline is thus likely to affect advancement of women through the corporate ranks into leadership positions which will have an effect on the availability of female leadership talent for internal appointment to board of directors. Independent directors on the other hand are “persons invited onto the board by the chairman or nominating committee by virtue of their primary employment, business expertise, industry contacts, or prior experience” (Burgess and Tharenou, 2002). Unlike internal directors, they are not gaining a position on the board through normal career progression. Hence qualified women having relevant experience and expertise are available from the open market for positions on boards. There is a need therefore to understand the endogenous factors like the human resource characteristics of women directors and their social connections and more importantly how these factors interact to have an impact on their appointments on corporate boards.

Human and social capital of women on corporate boards
While interrelated and sometimes empirically indistinct, human and social capital derived from different theoretical perspectives have been found to be highly correlated with an
individual’s performance and are critical to a director’s capacity for monitoring and providing resources (Becker, 1964; Hillman and Dalziel, 2003). Human capital theory assesses the role of an individual’s cumulative stocks of education, skills, and experiences in improving cognitive and productive capacities that are of advantage to the individual and his/ her organization. Directors bring unique human capital to the board and individuals must acquire extensive competence for being considered for director level positions (Kesner, 1988). A common myth about women is that they lack adequate human capital for board positions that has been dispelled by Singh et al. (2008) in their study of multiple human capital dimensions of new directors of the FTSE 100 firms in the United Kingdom - especially in terms of specialized education and international experience. Therefore,

\[ H1. \] The odds of being appointed as independent director(s) on Corporate Boards is higher with higher levels of Human Capital Index

While the human capital theory explains the need for gender diversity on boards from a resource-based view of the firm (Shrader et al., 1997), studies on individual and board characteristics have relied on social capital theories to explain board composition and influence. The collaborative ties fostered at a dyadic and group level within the members of the board are referred to as social capital (Coleman, 1988; Lin, 2001; Wu, 2008). It is defined as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (Nahapiet and Ghoshal, 1998).

The elite group of board level executives can be seen as a social network wherein the directors are focal points of contact in terms of organizational inter-linkages. Membership of such networks vest board directors with the capacity to provide resources in form of intelligence and connections to their board, their organization, as well as to other members of the network and operating as a collectively unified group (Westphal and Zajac, 1995; Windolf, 1998). In carrying out its responsibilities, the board seeks associations with the most advantageous resources and try to organize membership on the corporate board along these lines.

Additionally, some studies have either directly or indirectly alluded to the importance of two types of social capital; internal and external (Kim and Canella, 2007). Internal social capital is understood as ties and relations with other people within the board, mainly other directors while external social capital is seen as ties and relations with outside stakeholders such as investors, customers, regulators, politicians and so on (Kim and Canella, 2007).

Interestingly, in the context of selection of a female on the corporate board, aspects of social capital may work counter-intuitive to what research has shown in a gender-neutral scenario. Network theorists have argued how since childhood boys and girls are socialized to develop their networks differently (McPherson et al., 2001; Smith-Lovin and McPherson, 1995). These differences yield asymmetrical information flow, preponderance of internal social capital, weak external capital and perhaps contraction of networks yielding to a disadvantage to females in corporate and professional settings (Campbell, 1988; Fernandez and Sosa, 2005; Ibarra, 1992; McGuire, 2000). Given the composition of her social ties as discussed above, though females may have internal and external social capital, we hypothesize that these ties do not translate to becoming beneficial to her in improving her chances to be selected on the board.

In addition, the way social networks are developed in India pose further complexity for the women to get selected on the corporate board. Networks in India are representative of its cultural values, which emphasize strong family ties and social status (Dhir et al., 2016). In the collectivist culture such as India (Hofstede, 2001), individuals tend to belong to a few select in-groups driven by group membership (such as families and friendship networks), and such relationships of individuals to their in-groups are inclined to be stable over time (Triandis et al., 1988). Thus, if seen through the lense of a gendered approach to social network theory along with preponderance of homogenous, in-group ties of a female candidate, she finds
herself in a disadvantageous position to get appointed to a board position in spite of having strong social capital.

**H2.** The odds of being appointed as independent director(s) on Corporate Boards is lower with higher levels of Social Capital Index

Further, prior research on culture suggests that collectivists discriminate against out-group members and tend to favor members of in-group (Gómez et al., 2000). It can be surmised that however qualified a female aspirant to the board is, unless she has the social capital embedded in the relevant networks, there may be many unseen barriers to her entry into the boardroom. In other words, human capital alone will not help her to earn a seat on the board unless she has social capital. Thus,

**H3.** The odds of being appointed as independent director(s) on Corporate Boards is higher with combined Human and Social Capital Index

**Ownership structure and women on boards**

Ownership concentration is measured by the fraction of shares held by five largest shareholders (Demsetz and Lehn, 1985). According to them, this measure is more likely to be representative of the shareholder’s ability to control professional management. Welch (2003) summarizes the above situation by observing that the percentage of shares owned by the firm’s top five shareholders indicates the ability of outside shareholders to control the action of the management. In India, a business endeavor starts as proprietorship or partnership or closely-held limited firm. But when the growth occurs and attainment of large-scale becomes imperative for rapid growth, the closely-held business house is compelled to approach market to raise equity capital through the Initial Public Offering (IPO) route. The owners of the closely-held companies at the stage of IPO are known as “promoters” in the Indian context. They are considered insiders till they cease to retain control over the Board of Directors. The persons or bodies other than the promoters having investment in the share capital are “non-promoter” or “non-promoter shareholders”.

If promoters or promoters group retain substantial shareholding in the post-IPO period, it means concentrated shareholding pattern, and in such cases the promoters and/or their family members are likely to retain management control. Even if the promoters employ professional managers, the latter is subject to the direction and control of the former, adversely restricting the independent decision-making capacity of the professional management. If substantial shareholding is in the hands of the non-promoters, then the management is likely to be in the hands of the independent professional managers likely to enjoy much more flexibility and freedom.

With respect to the firms having concentrated shareholding of promoter family (henceforth referred as promoter driven firms), appointment of independent directors is a complex affair given an environment marked by hierarchies, patterns of deference and nepotism, along with intra-family conflicts (De Mott, 2008; Miller et al., 2007). The representation of women on boards has been found to have a linkage with family ownership (Campbell and Minguez-Vera, 2008; Claessens et al., 2000; Ruigrok et al., 2007) and negative linkage with state ownership (Saeed et al., 2017). Research suggests that often it’s likely for women to get appointed on boards of family-controlled or family owned firms when they are related to the owner families. In other words, having family connections seem to play an important role in securing a position on the board for women besides business related knowledge and relevant professional networks (Sheridan and Milgate, 2005). Such connections seem to signal a public recognition of women’s claim to a place on the board. This is often reassuring for nominating committees in appointing women directors especially...
when such hiring decisions are not subjected to external selection procedures (Campbell and Minguez-Vera 2008). Thus,

$H4$. The odds of women being appointed as independent directors on corporate boards of promoter driven firms is higher with higher human capital index.

$H5$. The odds of women being appointed as independent directors on corporate boards of promoter driven firms is higher with higher social capital index.

Figure 1 depicts our hypothesized model.

Method

Data and sample selection

The sample for this study comprises of 100 large listed Indian firms on the BSE by market capitalization in the year ended March 31, 2017. The prominent motives why Indian firms constitute an ideal sample to test our predictions: (1) Firms with concentrated shareholding form an important part of the Indian corporate sector. 60 percent of these top Indian firms are family run business groups whose ownership is opaque due to the widespread use of pyramiding, cross-holdings, and the use of non-public trusts (Chakrabarti et al., 2008). (2) India provides an exemplar of a patriarchal society where males dominate decision making and females are attributed to benevolence and conformism (Schwartz, 1992). Gender bias is deeply entrenched in the sociocultural constitution of the society (Batra and Reio, 2016) and clearly reflected across labor workforce. Hardly 23 percent workforce in Indian firms are female. The appointment at board positions was a dismal 3.63 percent (Kurup et al., 2011) until the mandatory introduction of the statute to appoint at least one female director on their boards to promote gender diversity.

The data was supplemented using large firm level database, Prowess, compiled and maintained by Center for Monitoring Indian Economy. This firm level database covers information for more than 40,000 firms primarily drawn from their financial statements and annual reports. This database was previously employed by firm-level studies for analyzing the value creation by female directors (Chauhan and Dey, 2017) and for analyzing diversity impact on bank behavior (Ghosh, 2010). Further, additional data on women directors were gathered through an extensive data collection process by the research team. This process scoured into multiple sources such as Bloomberg profile of individual directors, official and personal webpages, blogs, publicly available biographies, books, anecdotal articles, and Internet searches. To the best of author’s knowledge, this paper is first of its kind to use director demographics data from multiple sources in a developing country context.

Variables

Our research question examines individual characteristics of the women directors as predictors in the type of appointment. Thus, we measure our dependent variable by female
status, which is a dummy variable that takes the value 1 for a corporate board that has female independent director and 0 otherwise. In cases, where multiple female directors are appointed in the board, the majority status is considered. However, in cases the weightage of appointment is equal along categories, we did not find statistically significant results across categories.

Our main explanatory variable – director characteristics comprise of creation of two equally weighted indices namely Human Capital Index and Social Capital Index. We construct the index in two steps. The first step comprised of creation of sub-indices of component variables. In the second step, we average the values of the sub-indices to arrive at the overall Human Capital and Social Capital Index. This enabled a simple aggregation of sub-indices score by creating an unweighted index. Unweighted indices are commonly used in the literature for index creation (Cooke, 1989; Hossain and Hammami, 2009) and has the advantage of treating all sub-indices symmetrically without making arbitrary or data driven judgement on the relative importance of each sub index.

Human Capital Index comprise six dichotomous variables measuring education and experience whereas Social Capital Index comprise three dichotomous variables measuring busyness, social standing, and reputation of women board directors. The sub-indices of Human Capital comprised of six dichotomous variables and were motivated by the extant literature. The first variable concerned education degrees of women directors (Daily and Dalton, 1994; Wincent et al., 2010; Dalziel et al., 2011). The women directors with higher and professional education degree (e.g. PhD, MBA, PROFESSIONAL PG – CA, CFA, CIIIB) were coded as 1, otherwise 0. The ensuing variable comprised of their attendance in elite schools (Bond et al., 2010). Although elite school attendance is an established variable in the western context, we modified and defined this variable in the Indian context as degrees from premium schools such as Indian Institute of Management, Indian Institute of Technology, and Foreign Schools and classified as 1, otherwise 0. The third variable comprised of international education, women directors having degrees from international schools were classified as 1, otherwise 0. The next variable was coded as 1 if the women director had experience across three or more diverse sectors, otherwise 0. The fifth variable measured relatedness of director’s domain expertise with firm’s expertise and coded 1 in case of related, otherwise 0 (Jensen and Zajac, 2004; Westphal and Fredrickson, 2001). Director’s domain expertise was defined by her experience in a specific domain for at least ten years. Firm’s expertise was identified by looking at the National Industry Classification of the firm (similar to SIC Code in USA). Finally, the last variable was coded 1 in case the women director had international experience, 0 otherwise.

The sub-indices of Social Capital comprised of three dichotomous variables and were inspired by the extant literature. The first variable concerned board busyness, here busy director was coded as 1, otherwise 0. Busy directors are the directors having external directorship in three or more firms (Ferris et al., 2003; Tian et al., 2011; Jackling and Johl, 2009). Status, prestige, and reputation of a board of director could be an informational signal to the external stakeholders of the firm (Westphal and Stern, 2006, 2007). Thus, our second variable – social standing is measured by recognitions received by women directors nationally or internationally. The dummy variable was coded 1 in case of presence of recognition and 0 otherwise. Finally, reputation was proxied by presence of Google hits above the median Google hits of all women directors as on 31st December, 2018 and coded 1 and 0 otherwise (Singh et al., 2008). Google hits as a proxy for reputation is extensively used by UK executive search consultancy and is of recent origin in the academic literature. Table I describes the explanatory variables used for the study. In cases, where multiple women directors are appointed on a firm’s board, we considered average score for that firm for that particular year. The measures are influenced by the extant literature and modified for Indian institutional landscape. Ownership Structure is proxied by promoter shareholding in the firm. We also
used a modified measure of ownership – dummy variable that takes value 1 for majority promoter shareholding (>50 percent) and 0 otherwise. However, the results suggest statistically similar results.

**Data analyses**

In Indian context, most of the research studies (Chouhan and Dey, 2017; Ghosh, 2010) have utilized publicly available data to study the performance effects of women on corporate boards and banks. Although research using data from multiple sources is limited, this study is first of its kind to supplement secondary data from varied web resources for creation of the main explanatory variable – director demographics (i.e. Human Capital Index and Social Capital Index). The main strength of the paper lies in utilizing the logistic function for modeling a binary explained variable. Thus, logistic regression model is used to analyse the data collected by the research team from 100 firms across 17 prominent industries in India using the statistical software STATA.

The explained variable (appointment of women independent director or not) employed by our study is categorical/dichotomous in nature. Multivariate techniques such as multiple regression and multiple discriminant analysis are inappropriate as they violate the assumptions of linearity, normality, and homoscedasticity (Hosmer and Lemeshow, 1989; Bhanot et al., 2012). Logistic regression was proposed as an alternative technique for

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### Table I. Variable Description

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Explanatory Variable</th>
<th>Presence</th>
<th>Absence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent/ Non Independent Status</td>
<td>Appointment of an independent women director on the board</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Human Capital Index</td>
<td>Equally weighted index of six sub-indices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Sub Index 1</td>
<td>With certain degrees</td>
<td>PhD, MBA, Professional PG – CA, CFA, CAIIB (1)</td>
<td>Graduate and PG (0)</td>
</tr>
<tr>
<td>Education Sub Index 2</td>
<td>Attended elite schools</td>
<td>IIM, IIT, or top foreign schools (1)</td>
<td>Others (0)</td>
</tr>
<tr>
<td>Education Sub Index 3</td>
<td>International</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Experience Sub Index 4</td>
<td>Across three or more diverse sectors</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Experience Sub Index 5</td>
<td>Domain Expertise (At least ten years’ experience in a domain) related with firm’s expertise</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Experience Sub Index 6</td>
<td>International</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Social Capital Index</td>
<td>Equally weighted index of three sub-indices</td>
<td>Three or more external directorships held</td>
<td>(1)</td>
</tr>
<tr>
<td>Board Busyness Sub Index 1</td>
<td>Director status, prestige, and reputation can be an informational signal to external stakeholders about the organization. Measured by recognitions nationally or internationally</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Social Standing Sub Index 2</td>
<td>Median google hits of full director name as on 31.12.2018</td>
<td>(1)</td>
<td>(0)</td>
</tr>
<tr>
<td>Reputation Sub Index 3</td>
<td>Promoter Shareholding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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EDI 39,6
explaining explained variable which is categorical in nature. Following Bhanot et al. (2012) and Mennard (1995), we apply the logistic model with the following equation:

\[ L_i = \ln \left( \frac{P_i}{1 - P_i} \right) = \beta_1 + \beta_2 X_i + \epsilon_i \]

where \( L_i \) is the logit function for a categorical variable \( Y \)

\( P_i \) is the probability for appointing a women independent director.

\( X_i \) are the explanatory variables

\( \epsilon_i \) is the error term

As part of efforts to encourage inclusion in boardroom, in 2013, the Companies Act mandated the appointment of one women director on all corporate boards of listed firms. The explained variable for our study is “female status” and a substantial portion of the sample (70 percent) positively reports appointment of women independent director. While we are certainly interested in knowing if human capital or social capital contributes to such board appointments, our interest also lies in exploring if director characteristics are strengthened by ownership structure. As the board characteristics are more likely to be excluded (especially in firms with concentrated shareholding), it would be encouraging to know if such concentration improve inclusion of women independent directors on Indian corporate boards. Such conditional effect of \( X_1 \) (Human Capital) on \( Y \), at varying levels of \( X_3 \) (ownership structure) is captured by including an interaction term \( (X_1 \times X_3) \) in the model. Similarly, we capture the conditional effect of \( X_2 \) (Social Capital) on \( Y \), at varying levels of \( X_3 \) (ownership structure) by including an interaction term \( (X_2 \times X_3) \) in the model. The next interaction terms \( (X_1 \times X_2) \) captures the effect of overall board characteristics on appointment of independent women director. Table II describes the interaction effects in the models.

Model:

\[ Y_i = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_1 \times X_2 + \beta_5 X_1 \times X_3 + \beta_6 X_2 \times X_3 + \epsilon_i \]

where

\( Y_i \) = Appointment of women independent director on the board;

\( X_1 \) = Human Capital Index (HCI);

\( X_2 \) = Social Capital Index (SCI);

\( X_3 \) = Ownership Structure (OS);

Interaction effects: \( X_1 \times X_2; X_1 \times X_3; X_2 \times X_3 \)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Explanation</th>
<th>Acronym</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital Index</td>
<td>Equally weighted index of six parameters</td>
<td>HCI (%) X1</td>
</tr>
<tr>
<td>Social Capital Index</td>
<td>Equally weighted index of three parameters</td>
<td>SCI (%) X2</td>
</tr>
<tr>
<td>Ownership Structure</td>
<td>Promoter Shareholding</td>
<td>OS (%) X3</td>
</tr>
<tr>
<td>Interaction Terms (Moderation)</td>
<td>Interaction term between HCI and SCI</td>
<td>X1*X2</td>
</tr>
<tr>
<td></td>
<td>Interaction term between HCI and OS</td>
<td>X1*X3</td>
</tr>
<tr>
<td></td>
<td>Interaction term between SCI and OS</td>
<td>X2*X3</td>
</tr>
</tbody>
</table>

Table II. Interaction effects
Results

Sample profile

A quick glimpse of the profile of directors reveals the following details. In the given sample size of 100 BSE listed firms, with 147 women directors, there are 92 independent directors and 122 non-executive directors. Hence, only 63 percent of women board appointments are independent directors. At the demographics level, insights from human capital and social capital suggest detailed information on the education, experience, busyness, social standing, and status of women directors on Indian corporate boards. With regards to education, presence of doctorate and professional degrees were considered. Women respondents (19 percent) had not continued education beyond graduation, 17 percent were post graduate with degrees in science, arts and allied fields and only 46 percent continued higher education and pursued doctoral degrees. 51 percent of the women directors attended elite schools such as Indian Institute of Management, Indian Institute of Technology, and foreign business schools. However, international education was privy to 36 percent of women directors. Data on experience is representative of the aggregate experience and expertise of the women directors in the firm. Women with diversified experience (experience across more than three sectors) were in majority and only 65 percent women reported non-diverse experience. Relatedness was matched using the national industry classification for Indian firms and domain expertise (Greater than ten years’ experience in a sector) and 54 percent of women directors were directors in the related field of expertise. 5 percent women also had international experience during their professional journeys. 61 percent of the women directors had multiple directorships and 31 percent had received national or international recognition for their professional journeys. 75 percent of the women had prolific reputation evidenced by Google hits above the median Google hits of all 147 women directors captured as on 31st December 2018.

Descriptive statistics

Table III below summarizes the descriptive statistics for appointment of women directors, director characteristics, and firm characteristics. The firm size in terms of market capitalization ranges from Rs 0.98 million to Rs 0.98 billion, while the mean, median, and the standard deviation of the sample is Rs 1, Rs 1, and Rs 0.11 billion respectively. The descriptive results also indicate that the promoter shareholding of the sample firms are fairly concentrated as the mean and median is 49.47 and 51.85 respectively and ranges between 0 and 78.87 percent. Independent Women directors constituted 70 percent of the sample with a standard deviation of 0.46. Director demographics in terms of HCI and SCI suggests that on an average social capital (56 percent) was more than the human capital (42 percent) among the appointed women directors on corporate board. In the similar manner, the data suggest that maximum social capital of appointee women was 100 percent in comparison to 83.33 percent human capital.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>P50</th>
<th>S.D.</th>
<th>Minimum</th>
<th>Maximum</th>
<th>P25</th>
<th>P75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A: Dependent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appointment of women (Independent = 1, else 0)</td>
<td>0.70</td>
<td>1</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Panel B: Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCI(%)</td>
<td>41.90</td>
<td>44.44</td>
<td>21.93</td>
<td>0</td>
<td>83.33</td>
<td>25</td>
<td>58.33</td>
</tr>
<tr>
<td>SCI(%)</td>
<td>56</td>
<td>66.66</td>
<td>27.02</td>
<td>0</td>
<td>100</td>
<td>33.33</td>
<td>66.66</td>
</tr>
<tr>
<td>OS(%)</td>
<td>49.47</td>
<td>51.85</td>
<td>17.06</td>
<td>0</td>
<td>78.87</td>
<td>34.73</td>
<td>62.22</td>
</tr>
</tbody>
</table>

Table III. Descriptive statistics

Firm Size (Rs. Million) | 1.00 | 1.00 | 0.11 | 0.98 | 1.04 | 0.99 | 1.01
The pair-wise correlations between independent variables is included in Table IV. The maximum VIF score is within the permissible range (Myers, 1990) suggesting absence of multicollinearity.

The study analyzed 94 responses using the logistic regression model in the statistical package STATA. The dependent variable, representing, appointing a women independent director versus not appointing a non-independent director, was regressed on six variables. The logistic regression model generates the predicted probability value, which is an estimate of an observation being an event (corresponding to outcome variable, \( Y - 1 \)). The \( p \)-value in Model 1 is less than 0.0001 for likelihood ratio test, indicating that the model is significant. In addition, other test statistics are also significant. Table V suggests that SCI (\( X_2 \)), interaction effect of HCI*SCI (\( X_1*X_2 \)), interaction effect of SCI*OS (\( X_1*X_3 \)) are statistically significant factors of women’s appointment as an independent director. The remaining variables – HCI (\( X_1 \)) and interaction term HCI*OS (\( X_1*X_3 \)) are not potential predictors of women’s appointment as an independent director. Hence there is no evidence in support of Hypothesis 1 and 4. Maximum likelihood estimate is used to estimate the values of the unknown parameter in the logistic regression model.

Table V suggests that low social capital index is the most significant predictor for appointment of women independent director. There is evidence in support of Hypothesis 2. However, the negative parameter estimate changes to positive when interacted by ownership structure. Social capital of the directors gains prominence in the presence of concentrated shareholding and is a significant contributor in predicting appointment of independent women directors as depicted by a significant \( p \)-value at 5 percent level. There is evidence in support of Hypothesis 5. Interaction among HCI and SCI suggests that the likelihood of appointment of women independent director’s increases with cumulative increase in human and social capital and is significant at 1 percent level. Thus, there is evidence in support of Hypothesis 3. It is observed from Table V, the odds of having a women independent director is more in case of higher human capital in comparison to social capital.

<table>
<thead>
<tr>
<th></th>
<th>HCl</th>
<th>SCI</th>
<th>Promoter shareholding</th>
<th>Firm Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCl</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCI</td>
<td>0.29</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promoter Shareholding</td>
<td>−0.03</td>
<td>−0.09</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Firm Size</td>
<td>−0.06</td>
<td>0.06</td>
<td>−0.12</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table IV. Correlation Matrix

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Model 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Appointment of women independent director</td>
<td>Odds ratio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wald Chi-Square</td>
<td></td>
</tr>
<tr>
<td>HCI</td>
<td>−0.075</td>
<td>−1.13</td>
<td>0.93</td>
</tr>
<tr>
<td>SCI</td>
<td>−0.134**</td>
<td>−2.74</td>
<td>0.87</td>
</tr>
<tr>
<td>OS</td>
<td>−0.027</td>
<td>−0.53</td>
<td>0.97</td>
</tr>
<tr>
<td>HCI*SCI</td>
<td>0.002**</td>
<td>2.76</td>
<td>1.00</td>
</tr>
<tr>
<td>HCI*OS</td>
<td>−0.001</td>
<td>−0.58</td>
<td>1.00</td>
</tr>
<tr>
<td>SCI*OS</td>
<td>0.001*</td>
<td>1.91</td>
<td>1.00</td>
</tr>
<tr>
<td>Constant</td>
<td>5.891</td>
<td>1.71</td>
<td>361.74</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>−45.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table V. Logistic regression model parameter estimates and odds ratio

Note(s): **significant at 1% level, *significant at 5% level
Model adequacy Checking

Goodness of fit statistic is calculated for assessing the adequacy of the fitted model. Hosmer and Lemeshow goodness of fit statistic is the widely used statistic for categorical explained variable (Mennard, 2010). The study’s model suitably fits the data as the goodness of fit statistic is within the acceptable range of 5.54 with 0.70 as the corresponding $p$ value. Thus, our econometric model with the given outcome variable arguably fits the data (see Table VI).

Additionally, to measure the precision of binary classification ($y = 1/y = 0$), values for sensitivity, specificity and area under receiver operating characteristic curve (AUC) needs to be computed. Sensitivity value ascertains the probability that the model has accurately identified the likelihood of appointment of women independent director when they are actually appointed. Whereas, Specificity value ascertains the probability that the model has not identified non appointment of women director as appointed. Our model accurately classified 76.1 percent observations for the stated explanatory variables with 74 and 84 percent as optimum sensitivity and specificity values respectively at 0.70 cut off probability. The AUC value greater than 0.8 indicates that there is good model performance as association of predicted probability and observed response is 0.8244 (Hosmer and Lemeshow, 1989).

Discussion

Resource dependence theory leads us to expect that directors’ appointments be based, in part, on the endogenous aspects like the human capital (knowledge, skills, experience) and the social capital (networks, social connections) they can provide to the firms. The question addressed in this study was that how does human capital and social capital of women impact their appointment as independent women directors on boards? And how does ownership structure play a role in such cases?

Our findings contradict some of the myths about female directors not having sufficient education and experience. 46 percent had higher education and pursued doctoral degrees. 51 percent of the women directors attended elite schools. However, international education was privy to 36 percent of women directors. Women with diversified experience were in majority, 54 percent of women directors were directors in the related field of expertise. Also, 5 percent women had international experience during their professional journeys. Thus, the data falsifies the belief that there is a deficiency of “right” human capital among women candidates for being a director on the board (Singh et al., 2008). Possibly, net human capital across gender varies, however value is created through bringing diversity on corporate boards by appointing across gender.

However, results suggest that human capital of women directors by itself does not have a significant effect on the odds of her being selected for an independent board position. While this suggests a glass ceiling effect in case of women being appointed to board positions, it is

<table>
<thead>
<tr>
<th>Predicted</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointment of women independent director</td>
<td>Non – appointment of women independent</td>
</tr>
<tr>
<td>($Y = 1$)</td>
<td>director ($Y = 0$)</td>
</tr>
<tr>
<td>Appointment of women independent director ($Y = 1$)</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>44</td>
</tr>
<tr>
<td>(Sensitivity)</td>
<td>N</td>
</tr>
</tbody>
</table>

Table VI. Classification summary

<table>
<thead>
<tr>
<th>Non – appointment of women independent director ($Y = 0$)</th>
<th>21</th>
<th>84%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Sensitivity)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
not surprising to get such a finding in a collectivist patriarchal society like India where individual achievements of women are not in congruence with their gender identity and hence may serve only as necessary but not sufficient criteria for selection.

For the purpose of this study, social capital was operationalized as an aggregate of multiple directorships, national and international recognition, and social media presence. To the knowledge of the authors, this is the first time, social capital has been operationalized using an aggregate of proxies that include social media impact too for a study on board directors in India.

Interestingly, the findings revealed that social capital of women directors has a significant but negative effect on appointment as independent directors. In other words, higher the social capital of a woman director, lesser would be her chances of being appointed as an independent director. This is indeed a curious finding that gives insights into the prevalent perceptions about social capital in context of gender identity in India. In a culture characterized by patriarchal ethos and power structures, social capital of women can be viewed in an unfavorable light and cast shadows on her character. It can thus adversely affect her credibility as a candidate for a serious responsibility like that of a corporate board directorship. It appears that having social networks in male bastions of corporate boards is detrimental for women in the conservative Indian society.

However further results validate the positive and significant effects of human and social capital taken in conjunction, on the odds of being appointed as independent directors. The finding of the interaction effect of human and social capital on appointment as independent director on a corporate board reveals a double glass ceiling for women in India. She not only needs to have requisite education and experience; she needs to simultaneously develop social capital in order to stand a chance of being selected. It also possibly suggests that, standalone social capital of women directors undermines credibility of a female candidate unless she has the requisite education and experience to prove its legitimacy.

The study has brought out the impact of promoter shareholding on the relationship between social capital of women and their appointment as independent directors to the extent that it changed the direction of the relationship. This would go on to suggest that except in specific cases, women directors are not hired in Indian boardrooms for their individual human or social capital, but their appointment is rather dependent on their social connections with the promoter stakeholder. In other words, social capital of women directors pays off when they are part of the social network of promoter driven firms and helps them to get appointed as independent directors on the boards of such firms.

The model depicting the effect of firm ownership structure on characteristics of WOCBs is a novel contribution in the literature of corporate governance from a gender perspective. It delineates the complex interactions among individual characteristics of women directors and firm ownership structure and the effects thereof on the appointments of women directors to corporate boards.

Limitations
We recognize the limitations of our study. Firstly, the data was collected from resources available only in the public domain hence there could be crucial information missing. We had to rely on biographies and other information sources about the directors that were available publicly although self-reports provided by them would have been far more illuminating. It was rather challenging to get self-reports from the entire set of 147 individuals constituting our dataset. Secondly, our data analysis might suffer from effects of over-sampling. This could be because some of the women directors have been appointed to multiple boards and we have used each firm’s board as the base unit of analysis. Lastly, we acknowledge that our classification of the human and social capital proxies might have
masked significant disparities in education, experience and recognition. Hence there is likely to be researcher-induced bias due to the coding structures and categorization decisions.

Implications
The contributions of this study are manifold. First, it examines the appointment of independent women directors from the lens of human and social capital and their interaction. The findings provide empirical evidence that human capital by itself does not have a significant effect but does so only in conjunction with social capital. Second, it reveals the prevailing unfavorable perceptions about social capital of a woman and the costs she bears unless it rests on legitimacy of strong human capital. Third, it identifies that, ownership structure plays an important role in appointment of independent women director by interaction with their social capital. Finally, this paper provides a new perspective on the endogenous issues of independent women director appointments on corporate boards in India, by drawing out insights based on the “patriarchal ethos” still deeply entrenched in the upper echelons of business and society. This calls for a national debate on the missing spirit of gender egalitarianism, which constitutes the very foundation of corporate governance and as legally promulgated in the Companies Act 2013 which for the first time made it obligatory for certain class of firms to appoint at least one woman on its Board of Directors. This provision on appointing women director was legislated with the aim to advance diversity and inclusion on Indian boards.

We suggest several possibilities for future research. Firstly, an examination of the legitimizing processes of access to boards could reveal what kind of human and social capital is likely to lead to appointment on corporate boards. A study on the actual practices adopted by firms for appointments to corporate boards will throw light on the ground level challenges that might be operating with respect to promoting gender diversity on boards. Further, obtaining inputs from board members about the presence and effects of gender diversity in human and social capital resources in the board will help to build insights about its impact. Future research might also consider a broader study examining differences in human and social capital profiles between male and female directors.

As this study refers to the human and social capital of female director’s cohort in 2018, it would be interesting to track some of the changes over a period of time with future cohorts of female appointees on corporate boards. In recent times, due to the pipeline problems affecting representation of women on boards, efforts are being taken by policy makers, business leaders and academics to train, coach and mentor women in senior positions to make them board-ready. The findings of this study can offer a broad roadmap for leadership development programs aimed at preparing women for corporate leadership roles. Finally, the findings of this paper imply effects of the larger cultural context on appointment of women on corporate boards. It would thus be cogent to test the model in other diverse cultural contexts in order to obtain deeper insights about how it plays out for women at leadership levels of business houses.

References
Ananya, I. (2016), Do Accomplished Indian Women Really Need Mentorship and Men don’t to be on Company’s Board, The First Post, Mumbai.


Myers, R.H. (1990), *Classical and Modern Regression with Applications*, PWS-Kent, Boston, MA.


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